Illinois Commerce Commission

Assessment of Illinois Power Company

Reliability Report for the 1999 Period

Pursuant to 83 Ill. Adm. Code 411.140

January 22, 2001

1. Executive Summary

Beginning with the year 1999, and at least every three years thereafter, 83 Illinois Administrative Code Part 411.140 requires the Commission to assess the annual reliability report of each jurisdictional entity and evaluate its reliability performance. This document assesses the annual reliability report filed by Illinois Power Company ("IP") on June 1, 2000, (revised August 11, 2000, and covering calendar year 1999) and evaluates Illinois Power's reliability performance for calendar year 1999.

Assessment of 1999 Reliability Report

Illinois Power's first report pursuant to 83 Illinois Administrative Code Part 411 ("Part 411"), for calendar year 1998, had a number of shortcomings. These included misleading statistics due to problems with the company's Trouble Outage System (TOS) and the operation of that system. In its 1999 report, IP indicated that it has developed a new TOS reporting tool that enables more accurate reporting of its reliability indices. While this is a very positive step, there is still evidence that IP is not accurately reporting causes for the outages.

Also notable in IP's 1999 report are the high incidence of tree related customer interruptions as well as a high incidence of interruptions caused by accidents and errors made by IP employees and contractors. The Commission recommends that IP address and fix these problems on an expedited basis.

Illinois Power's Historical Performance Relative to Established Reliability Targets

Part 411.140(b)(4)(A-C) establishes reliability targets that jurisdictional entities must strive to meet. These targets specify limitations on customer interruptions as well as hours of interruption that a utility should strive not to exceed on a per customer basis. However, Part 411.120(b)(3)(K)&(L) does not require the utility to report individual customer outage data until the 2001 reliability report, which will be filed on June 1, 2002.

Table 1 below shows Illinois Power's system wide reliability statistics for 1999 compared to other Illinois electric utilities.

Table 1

	SAIFI	CAIDI (minutes)	CAIFI
AmerenCIPS	1.72	146.92	2.39
AmerenUE	1.55	169	2.24
CILCO	1.82	127.8	2.35
ComEd	1.46	139	2.03
Illinois Power	**1.35**	**144**	**1.96**
MidAmerican	1.62	110.15	1.95

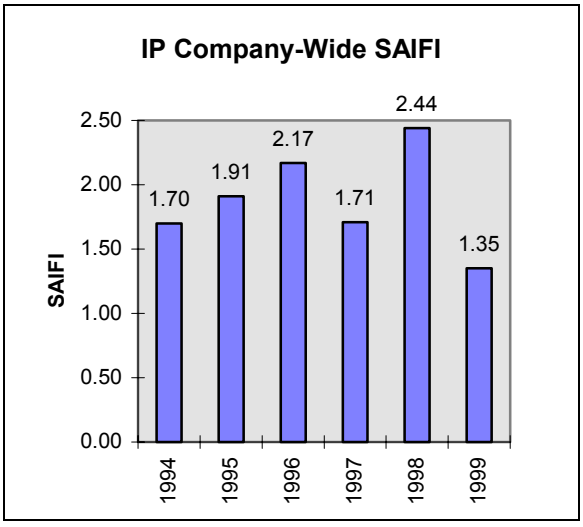
SAIFI: System Average Interruption Frequency Index
CAIDI: Customer Average Interruption Duration Index
CAIFI: Customer Average Interruption Frequency Index

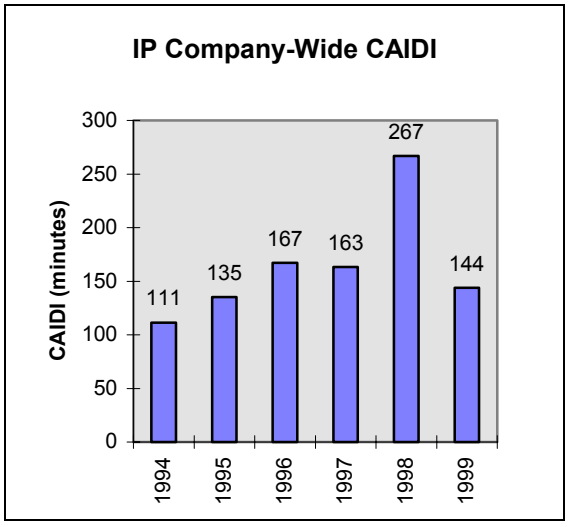
Trends in Illinois Power's Reliability Performance

The charts below (Figure 1) show the trends for the SAIFI and CAIDI indices reported by IP for calendar years 1994 through 1999. Increasing values of these statistics translate to a worsening of reliability, while decreasing values translate to an improvement of reliability. IP's 1999 reported reliability indices indicate a significant improvement in reliability from 1998 and from the trend in recent years. The amount of actual reliability improvement, however, is not clear.

As noted in last year's assessment report, the Commission is aware that the data from 1994 through 1997 is not necessarily directly comparable to 1998. In its 1999 report, IP states that the "total number of customer interruptions decreased 40% in 1999 relative to 1998." IP also describes the effect of a new outage reporting tool developed in 1999 that enables it to more accurately report its reliability indices. IP further states "The past reporting tool inaccurately included inactive customers and sometimes double counted customers out in an outage. Therefore, we have been over reporting our numbers in the past." Because of the over-reporting of outages in prior years, it is not clear how much of the 1999 improvement in reliability indices actually reflects an improvement in reliability.

Figure 1





Illinois Power's Plan to Maintain or Improve Reliability

IP's goal is to patrol every circuit and to trim trees on every circuit on a four year cycle. However, IP admits that some circuits have gone six or seven years without a trim.

IP inspects oil circuit reclosers monthly and replaces them every five years.

IP's standards call for installing lightning arresters on all new transformers and at least four lightning arresters per circuit mile. It is not clear to what degree IP retrofits existing circuits with additional lightning arresters, especially in areas which experience a significant number of lightning outages.

IP's standards call for installing animal guards on all new transformers as well as at existing problem areas.

The Commission believes these are good practices for improving reliability, but some areas need more attention, as noted in the recommendations.

Potential Reliability Problems and Risks

IP admits it is behind in tree trimming. The Commission is concerned that IP has been behind its four year tree trimming schedule since 1995 and is becoming more dilatory as time passes. Illinois power should do whatever is necessary to catch up with the four-year tree trimming cycle.

Other issues related to personnel training and to follow-through on planned work on worst-performing circuits need more attention. These issues are itemized in the recommendations section of this report.

Review of IP's Implementation of Its Plan for the Previous Reporting Period

Some of the planned work on worst performing circuits from prior years has clearly been accomplished. However, IP generally did a poor job of describing completed actions from the prior year's plan, which may also mean that few of the planned actions were actually done.

IP needs to do a better job of following through on planned actions to improve worst performing circuits and in describing the completed and remaining planned actions.

Review of Recommendations

- IP should expedite its tree trimming to get back to its policy of a four year trim cycle by the end of year 2002.

- IP should address and fix the problems which result in more than 25% of the controllable customer interruptions in 1999 being caused by accidents, dig-ins, and "human error" made by its own personnel and contractors.

- IP should do a better job of following through on planned actions to improve worst performing circuits and in describing the completed and remaining planned actions in its reliability report.

- IP should promptly fix the safety and reliability problems on Bloomington Circuit 202.

- IP should address the issue of training its personnel to do a much more careful job of identifying safety and reliability problems when performing circuit inspections.

- IP should address the issue of training its personnel to correctly identify and record outage causes, including differences between weather and tree related outages.

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2. Introduction

Beginning with the year 1999, and at least every three years thereafter, 83 Illinois Administrative Code Part 411.140 requires the Commission to assess the annual reliability report of each jurisdictional entity and evaluate its reliability performance. Code Part 411.140 requires the Commission evaluation to:

A) Assess the reliability report of each entity.

B) Assess the jurisdictional entity's historical performance relative to established reliability targets.

C) Identify trends in the jurisdictional entity's reliability performance.

D) Evaluate the jurisdictional entity's plan to maintain or improve reliability.

E) Include specific identification, assessment, and recommendations pertaining to any potential reliability problems and risks that the Commission has identified as a result of its evaluation.

F) Include a review of the jurisdictional entity's implementation of its plan for the previous reporting period.

This document assesses the annual reliability report filed by Illinois Power Company ("IP") on June 1, 2000, (revised August 11, 2000, and covering calendar year 1999) and evaluates Illinois Power's reliability performance for calendar year 1999. This report is organized to follow the above listed requirements.

Part 411.110 of the 83 Illinois Administrative Code requires the utility to, among other things, record and report reliability information at the customer level. Since these record keeping requirements at the customer level took effect for Illinois Power on January 1, 1999, IP's 1999 reliability report is its first annual report to require that information.

3. Assessment of Illinois Power's 1999 Reliability Report

According to IP's Trouble Outage System (TOS), Illinois Power Company provides electric service to approximately 582,582 customers in Illinois. IP's service territory consists mainly of rural areas and small towns. About 91% of IP's distribution system is overhead, with the remaining 9% being underground.

IP prepared its 1999 Reliability Report in compliance with Section 16-125 of the Public Utilities Act and the Commission's electric reliability rules as found in 83 Illinois Administrative Code, Part 411. IP filed a revised report on August 11, 2000, addressing all issues not in compliance with Code Part 411 which were raised by ICC Staff in a letter dated July 6, 2000.

In last year's ICC assessment report (for year 1998), it was noted that problems with IP's Trouble Outage System had caused misleading statistics to be reported. In its 1999 Reliability Report, IP reported that it developed a new TOS reporting tool in 1999 that enables more accurate reporting of its reliability indices. The former reporting tool inaccurately included inactive customers and sometimes double counted customers interrupted as a result of a system outage. Therefore, IP claims that it has been over reporting its numbers in the past and implies that this problem has been corrected.

IP also reported that its centralized dispatch center has developed a comprehensive training program for new and existing employees which stresses the importance of obtaining detailed and accurate service interruption data from the field. This training improves the accuracy of the data being entered into the Trouble Outage System which, in turn, will help IP to make better decisions on how to invest electric system reliability dollars. There are problems and discrepancies about the causes of controllable customer interruptions in IP's 1999 report, however, which indicate that more training and attention to detail in reporting customer interruption information is still needed. See additional discussion of these problems and discrepancies below in relation to the data shown in Table 4.

Also notable in IP's 1999 report are the high incidence of tree related customer interruptions (23.87% of all controllable system outages and 21.41% of all controllable customer interruptions) and a high incidence of interruptions caused by accidents and errors made by IP employees and contractors (12.90% of all controllable system outages and 25.04% of all controllable customer interruptions). See additional discussion of these issues below in relation to the data shown in Table 4a. The Commission recommends that IP address and fix these problems on an expedited basis.

Part 411.120(b)(3)(G) requires the utilities to report on the age of their distribution equipment. Illinois Power estimates that its distribution system is approximately 18.5 years old based on its most recent depreciation study. Remaining distribution system service life ranges from 10.6 years to 60 years. Since each of the reporting utilities used a different format to report the age characteristics of its distribution system, however, it is impossible to compare the age of equipment across utilities. To facilitate having this information in a comparable and consistent format utility-to-utility, the Commission Staff developed a table for all utilities to use for this purpose in future reliability reports. This table is shown as Attachment 1 in Staff's 1998 Reliability Assessment Report.

4. Illinois Power's Historical Performance Relative to Established Reliability Targets

Part 411.140(b)(4)(A-C) establishes reliability targets that jurisdictional entities must strive to meet. These targets specify limitations on customer interruptions as well as hours of interruption that a utility should strive not to exceed on a per customer basis. However, Part 411.120(b)(3)(K)&(L) does not require the utility to report individual customer outage data until the 2001 reliability report, which will be filed on June 1, 2002. The customer service reliability targets are listed in Table 2.

Table 2
CUSTOMER SERVICE RELIABILITY TARGETS

Immediate primary source of service operation voltage	Maximum number of controllable interruptions in each of the last three consecutive years	Maximum hours of total interruption duration due to controllable interruptions in each of the last three years
69kV or above	3	9
Between 15kV & 69kV	4	12
15kV or below	6	18

Table 3 below shows Illinois Power's system-wide reliability indices for calendar year 1999 compared to other Illinois electric utilities. This data indicates that Illinois Power was the most reliable electric utility in Illinois in terms of average frequency of system interruptions (SAIFI) and second best in terms of average frequency of customer interruptions (CAIFI) during 1999. It also indicates that IP was in the middle of the group in terms of average duration of customer interruptions (CAIDI) in 1999.

The comparison of system-wide reliability indices for Illinois electric utilities should indicate relative reliability levels achieved. The reader of this report should, however, keep in mind that each Illinois electric utility has a unique electric system, a unique group of customers, and a unique method of defining, recording, and reporting the interruption data.

Table 3
ILLINOIS UTILITY RELIABILITY INDICES
CALENDAR YEAR 1999

	SAIFI	CAIDI (minutes)	CAIFI
AmerenCIPS	1.72	146.92	2.39
AmerenUE	1.55	169	2.24
CILCO	1.82	127.8	2.35
ComEd	1.46	139	2.03
Illinois Power	**1.35**	**144**	**1.96**
MidAmerican	1.62	110.15	1.95

SAIFI: System Average Interruption Frequency Index. This represents the number of customer interruptions divided by total system customers.

CAIDI: Customer Average Interruption Duration Report. This represents, for customers that actually had an interruption, how long, on average, the interruptions lasted.

CAIFI: Customer Average Interruption Frequency Index. This represents the interruption frequency for the group of customers that had interruptions. A CAIFI index much higher than SAIFI suggests that subsets of customers experienced significantly more frequent interruptions than the overall system average.

Table 4 below shows a breakdown of the 22 causes of the controllable system outages and customer interruptions, reported by IP, as a percentage of the total. Noteworthy are the Interruption Cause Categories labeled "Unclassified Error", "Broken Fuse Link", and "Unknown". None of these are meaningful causes of interruptions, yet combined they amount to 24.29% of the controllable outages and 22.49% of the controllable customer interruptions reported by IP. IP needs to do a much better job of identifying the true causes of system outages and customer interruptions.

Also notable is the total of 2 controllable outages (0.09%) and 2 controllable customer interruptions (0.002%) attributed to wildlife (animals, birds, snakes, other) system-wide in 1999. This wildlife data is extraordinarily low and is contradicted by IP in other portions of its reliability report. In the "Operating and Maintenance History" provided for each of IP's 21 worst performing circuits in 1999, IP lists wildlife as one of the causes of the outages for 8 of those circuits. For each of those eight circuits, IP attributes wildlife as the cause of anywhere from 8% up to 57% of the total number of outages in 1999. IP counts wildlife-caused outages occurring where animal guards are in place as uncontrollable, but, even so, the number of 2 “controllable” wildlife-caused outages for the entire electric system for the year is just not credible. This discrepancy places the credibility of IP's outage cause data in doubt.

Table 4
CONTROLLABLE INTERRUPTION BREAKDOWN BY CAUSE

Interruption Cause Category	% of Controllable Outages	% of Controllable Customer Interruptions
Tree Contact Secondary	7.11	1.79
Tree Contact Service Drop	0.05	0.001
Tree Contact Primary	16.71	19.61
Maintenance/Upgrade/Repair	3.06	1.70
Scheduled Construction	0.05	0.01
Accident by IP or IP Contractor	5.04	16.90
Dig-In by IP or IP Contractor	0.47	0.13
Switching Error	1.37	5.79
Testing Error	0.28	1.45
Unclassified Error	5.74	0.77
Broken Fuse Link	3.91	1.33
OH Equipment Contamination	0.05	0.001
OH Equipment Malfunction	3.44	2.77
Substation Equipment	0.05	0.001
Transmission System Outage	0.05	0.001
UG Equipment Malfunction	0.05	0.07
UG Failure	28.77	13.54
Unknown	14.64	20.38
Extreme Cold	1.65	2.23
Extreme Heat	3.63	4.12
Ice	3.81	7.39
Animals, Birds, Snakes, Other	0.09	0.002

Table 4a is a summary of the data given in Table 4 with the causes of the controllable system outages and customer interruptions reported by IP grouped into 8 slightly broader categories. Noteworthy is the high percentage of interruptions caused by tree contacts (mostly with primary circuits), indicating that IP may be able to significantly improve its reliability by greater attention to tree trimming. In the planned actions described for worst performing circuits in Attachments 7 and 8 of its 1999 reliability report, IP indicates a planned lack of adherence to a four-year trimming cycle even for some of those circuits, as shown below:

- Hillsboro Circuit 812--Last trimmed in 1996, trimming planned for 2001 (5 years)
- Sparta Circuit 915--Last trimmed in 1994, trimming planned for 2000 (6 years)
- Sparta Circuit 928--Last trimmed in 1995, trimming planned for 2000 (5 years)
- Sparta Circuit 935--Last trimmed in 1995, trimming said to be planned for 1999, but no indication that it was done then.

As discussed in more detail in topic 7, “Potential Reliability Problems and Risks” below, some IP circuits have gone six to seven years without tree trimming. The Commission urges IP to increase its efforts to catch up on tree trimming.

Also notable is the high percentage of customer interruptions caused by accidents and dig-ins by IP and its contractors. Adding the "Human Error" caused interruptions indicates that more than 25% of IP's customer interruptions in 1999 were caused by accidents and errors made by IP's employees and contractors. The Commission urges IP to fix the problems underlying this high percentage of employee-caused interruptions.

Table 4a
SUMMARY OF CONTROLLABLE INTERRUPTIONS BY CAUSE

Interruption Cause Category	% of Controllable Outages	% of Controllable Customer Interruptions
Tree Contacts	23.87	21.41
Scheduled Maintenance & Construction	3.11	1.71
Accidents & Dig-Ins by IP & IP Contractor	5.51	17.03
Human Error (Switching, Testing, Other)	7.39	8.01
Equipment Failure	32.39	16.38
Weather (Cold, Heat, Ice)	9.09	13.74
Wildlife	0.09	0.002
Unknown (Including "Broken Fuse Link")	1.37	5.79

Part 411.120 (b)(3)(I)&(J) requires the reporting utility to list its worst-performing circuits (subsection I) and then state (subsection J) what corrective actions are planned to improve those circuits' performance. Table 5 below shows IP circuits with the highest SAIFI indices for 1999 (indicating highest frequency of total circuit outages).

Table 5
IP CIRCUITS WITH HIGHEST SAIFI, CALENDAR YEAR 1999

SERVICE AREA	CIRCUIT	SAIFI	CAIDI (minutes)	CAIFI
Belleville	222	4.18	144	4.18
Bloomington	202 *	4.11	219	4.11
Decatur	128 *	5.49	96	5.49
Decatur	161	3.92	133	4.49
Granite City	296	4.15	84	4.15
Hillsboro	812	4.36	144	5.08
Jacksonville	331 *	4.09	500	4.09
Sparta	915	4.64	215	4.64
Sparta	916 *	7.85	188	7.85
Sparta	934	4.36	214	4.36

As part of its review of IP's 1999 reliability report, Staff engineers inspected four of IP's worst performing circuits, marked with asterisks (*) in Table 5. The inspections allow Staff to verify that work was performed on the circuits as stated in the reliability report and to see if there are any apparent reasons for the poor performance of these circuits. For example, Staff looked for poor tree trimming practices, broken poles, rotten crossarms, damaged electrical devices, etc.

Bloomington circuit 202 is a 12 kV circuit serving the towns of Danvers and Stanford and rural area between and around those towns. The field inspection of this circuit by Staff in August, 2000, revealed a lengthy list of potential reliability and safety problems, especially in and around the town of Stanford. Many of these problems were very obvious structural deteriorations, most of which were not noted when IP personnel performed a field inspection of the circuit only one month earlier. Figures 2 and 3 below show examples of some of the structural problems found. IP needs to not only promptly fix the problems identified on this circuit, but also review and improve its procedures and practices related to circuit inspections generally. In a meeting with Staff in November, 2000, IP outlined a plan to address all of these concerns. Staff will monitor IP's progress in fulfilling this plan.

Figure 2
Deteriorated Crossarm, Bloomington Circuit 202

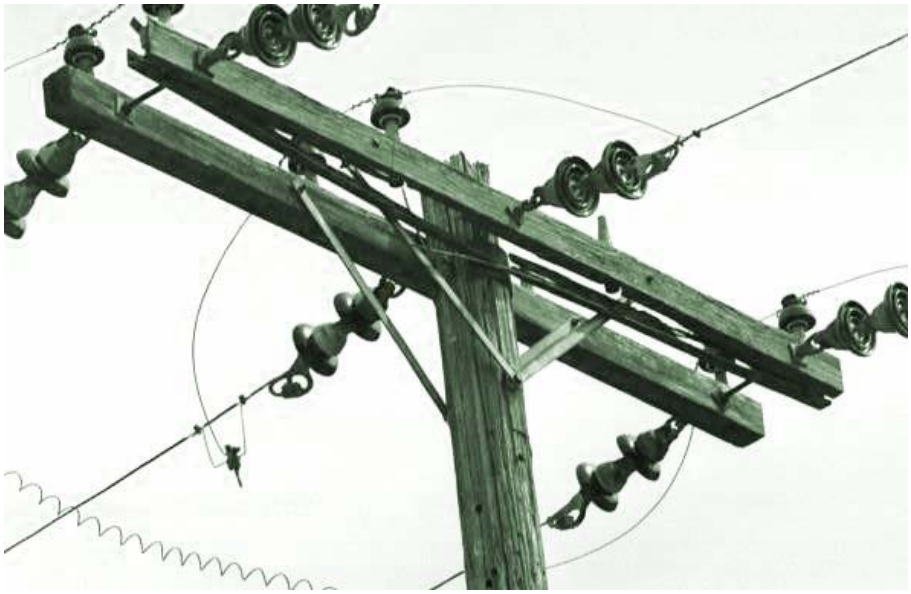


Figure 3
Split Pole, Bloomington Circuit 202

Decatur circuit 128 is a 12 kV circuit serving a residential (and some commercial) area in the northeast part of Decatur. The Staff field inspection of this circuit in August, 2000, did not reveal an obvious reason for its poor performance in 1999.

Jacksonville circuit 331 is a 12 kV circuit serving residential and commercial customers in the northeast part of Jacksonville as well as a large rural area north and east of Jacksonville. As a result of its field inspection of this circuit in August, 2000, Staff feels that the most likely reason for the circuit's poor performance in 1999 was the lengthy rural exposure. Staff observed several areas of tree conflicts with the primary circuit as well as several areas with a high number of splices in the primary conductors.

Sparta circuit 916 is a 12 kV circuit serving residential and commercial customers in the north and northwest parts of Chester and the rural area to the north and northwest to the south edge of Ellis Grove. This circuit has a lot of rural exposure, largely just north and east of the Mississippi River. At 7.85, this circuit had the highest SAIFI of all circuits reported by IP in 1999. During the field inspection of this circuit in September, 2000, Staff observed several areas of tree conflicts. Trees are suspected as being a significant contributing factor to the circuit's poor performance in 1999. In the rural areas, Staff also noted many poles with woodpecker damage, with some poles containing several woodpecker holes. Figure 4 below shows a distribution pole along Route 3 northwest of Chester which has been damaged with a total of 12 woodpecker holes.

Figure 4
Woodpecker-Damaged Pole, Sparta (Chester) Circuit 916

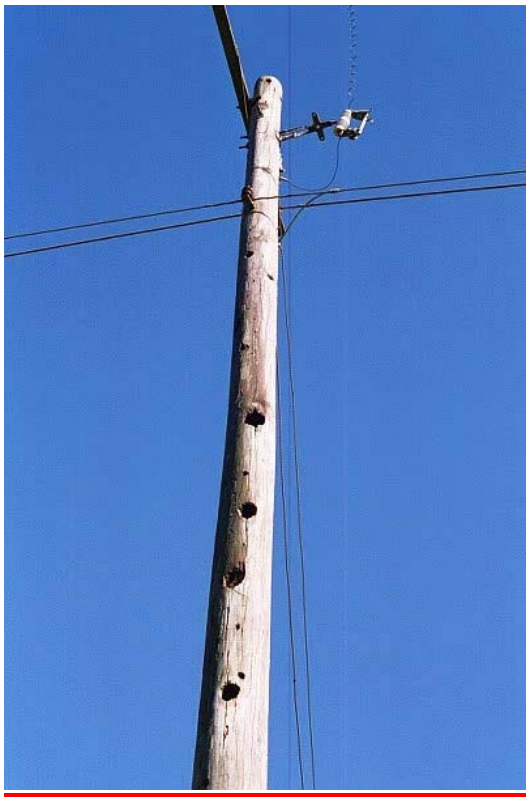


Table 6 below shows IP's worst performing circuits in 1999 as indicated by their high CAIDI indices (indicating highest average duration of customer interruptions). Note that none of these circuits have corresponding high values for SAIFI, indicating that the circuits had relatively few, but relatively lengthy outages in 1999. It is notable that these CAIDI indices are greatly improved from the CAIDI worst performers in 1998, with the worst of 1999 being 73% less than the worst of 1998. This is most likely attributable to fewer major storms occurring in the IP service territory in 1999 than in 1998.

Table 6
CIRCUITS WITH HIGHEST CAIDI, CALENDAR YEAR 1999

SERVICE AREA	CIRCUIT	SAIFI	CAIDI (minutes)	CAIFI
Champaign	541	0.35	753	1.09
Decatur	215	0.09	673	1.39
Jacksonville	110	0.06	787	1.52
Maryville	293	0.47	658	1.00
Mt. Vernon	104	0.14	1,163	1.00
Mt. Vernon	112	0.10	716	1.00
Mt Vernon	156	0.13	817	1.00
Sparta	904	0.04	1,072	1.11
Sparta	928	1.05	1,292	1.07
Sparta	935	1.23	672	1.26

Table 7 below shows IP's worst performing circuits in 1999 as indicated by their high CAIFI indices (indicating highest average frequency of customer interruptions) as reported by IP in its 1999 Reliability Report. Note that none of these circuits appear on the highest CAIDI list and all but Champaign circuit 116 are duplicated on the highest SAIFI list.

Table 7
CIRCUITS WITH HIGHEST CAIFI, CALENDAR YEAR 1999

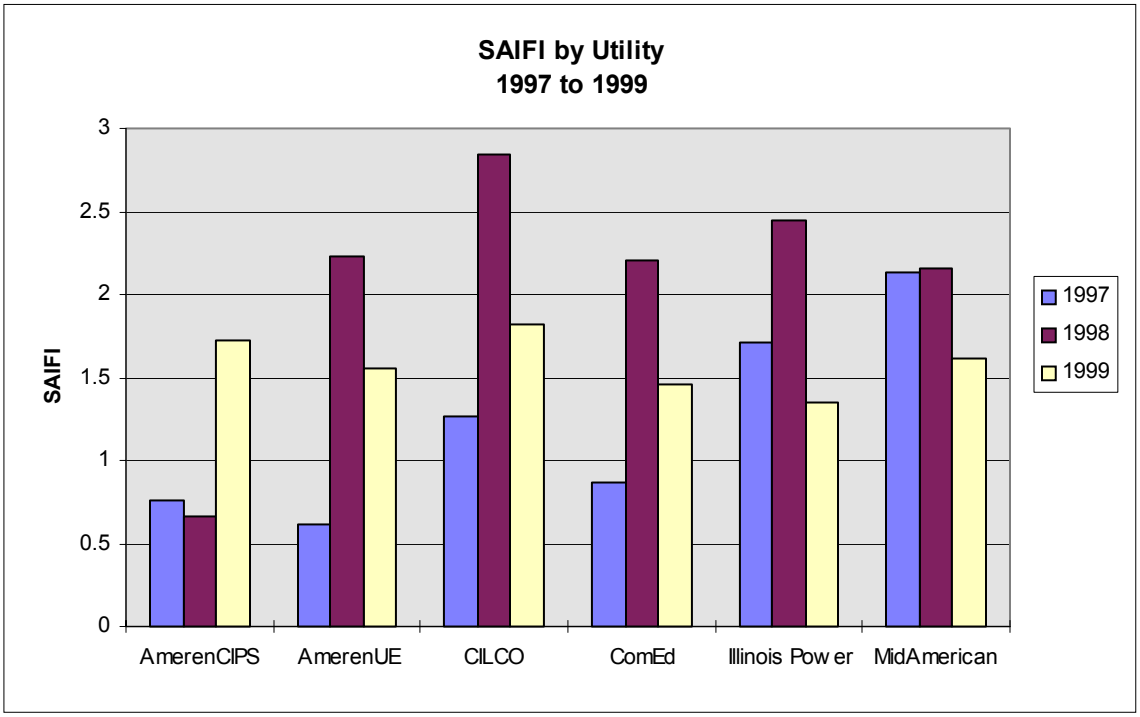
SERVICE AREA	CIRCUIT	SAIFI	CAIDI (minutes)	CAIFI
Belleville	222	4.18	144	4.18
Bloomington	202	4.11	219	4.11
Champaign	116	0.98	62	12.56*
Decatur	128	5.49	96	5.49
Decatur	161	3.92	133	4.49
Granite City	296	4.15	84	4.15
Hillsboro	812	4.36	144	5.08
Sparta	915	4.64	215	4.64
Sparta	916	7.85	188	7.85
Sparta	934	4.36	214	4.36

* Note: In response to a question from Staff about the accuracy of the 12.56 CAIFI for Champaign circuit 116, IP informed Staff on January 3, 2001, that Champaign circuit 116 should not be listed among the worst CAIFI circuits and that its 1999 CAIFI index should be 1.02. The incorrect CAIFI value of 12.56 resulted from an error in extracting the customer data for an outage of 612 customers normally assigned to an adjacent circuit, but which were on circuit 116 at the time of the outage.

5. Trends in Illinois Power's Reliability Performance

Figure 5 below shows a comparison of SAIFI values reported by the utilities for years 1997, 1998, and 1999. Storms throughout the state in 1998 increased all utilities' SAIFI numbers. Realistic year-to-year comparisons of this data for IP are difficult, as discussed below.

Figure 5



Note: The 1997 Illinois Power data is the simple average of several service areas. Weighted average SAIFI is not available.

1998 was the first reporting period for the Part 411 reporting requirements. IP wrote the preceding reliability reports pursuant to Part 410. There are some seemingly minor changes in reporting requirements that, nevertheless, impact the ability to make year-to-year comparisons. The note on the above chart shows the first problem. IP's reports prior to 1998 did not provide a company-wide SAIFI, CAIDI or CAIFI. Instead, IP provided these statistics for each operating area within IP's service area. Staff computed a simple average for comparison, which is a technically incorrect way to compute the company-wide indices. The second problem with comparing 1998 and 1999 data to prior years pertains to the identification of the worst performing circuits. 1998 and 1999 reliability reports identify the ten worst performing circuits for IP's entire service area. Earlier reports identified the

worst performing single circuit for each of 17 smaller operating areas. There is a distinct possibility that additional circuits in an operating area could have had worse reliability statistics than the worst of another operating area, but it is not possible to know from the reports prior to 1998.

Figure 6 below shows IP's SAIFI indices from 1994 through 1999. While IP's SAIFI trend has been, except for 1997, steadily climbing (worsening) since 1994, the 1999 SAIFI index shows a marked improvement from the historical trend. It is unclear to what degree this represents improvement in the actual electric system reliability, however, because of IP's acknowledgment that it reported misleading statistics in the past. As discussed in more detail under topic 3 ("Assessment of Illinois Power's 1999 Reliability Report") above, IP claims that the 1998 data, for example, inaccurately included inactive customers and sometimes double counted customers interrupted as a result of a system outage. While IP claims to have remedied this problem with a new TOS reporting tool in 1999, it has exposed one more problem in making year-to-year comparisons of IP's reliability statistics.

Figure 6

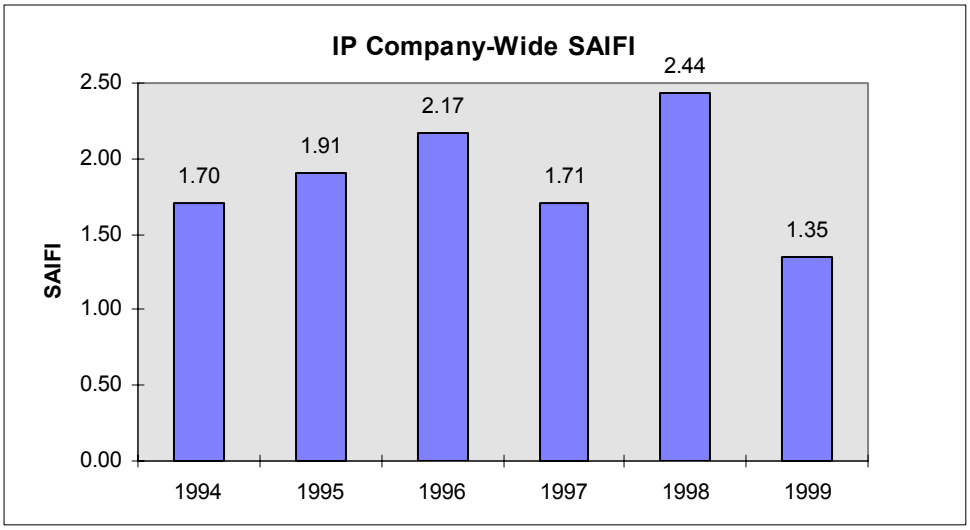


Figure 7 below shows IP's system wide CAIDI statistics over the past six years. As discussed previously for worst performing circuits, the reason for the much lower overall system CAIDI in 1999 than in 1998 is most likely attributable to fewer major storms occurring in the IP service territory in 1999 than in 1998. As noted in last year's reliability assessment report, a large storm moved through IP's service territory in June, 1998, which impacted IP's 1998 reliability statistics significantly. The 1999 CAIDI is slightly better than the 1996-1997 trend might indicate, but slightly worse than earlier years.

Figure 7

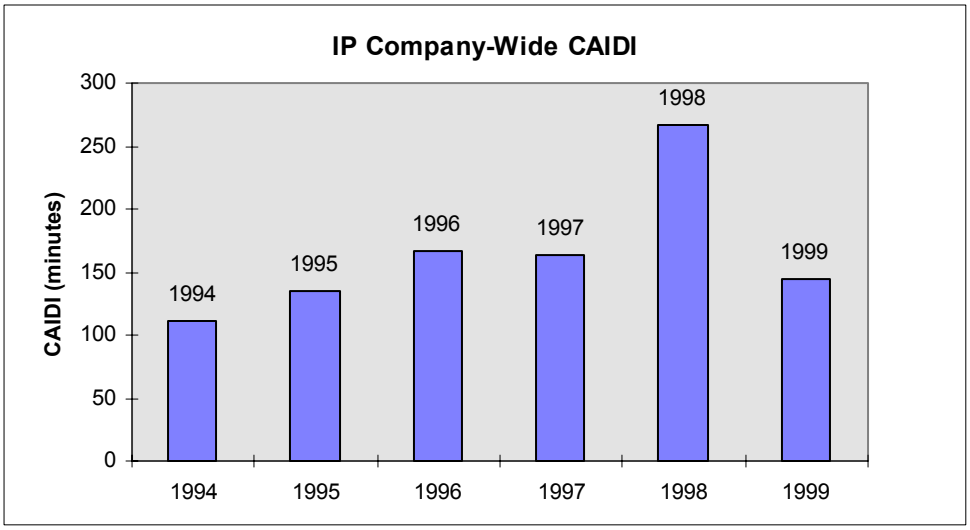


Figure 8 below shows the SAIFI index of IP's single worst performing circuit as reported over each of the last six years. For this statistic, there is no clear trend.

Figure 8

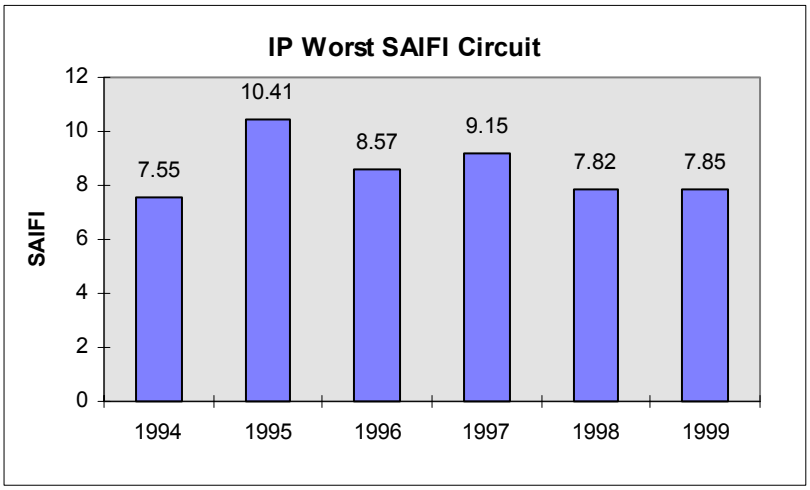
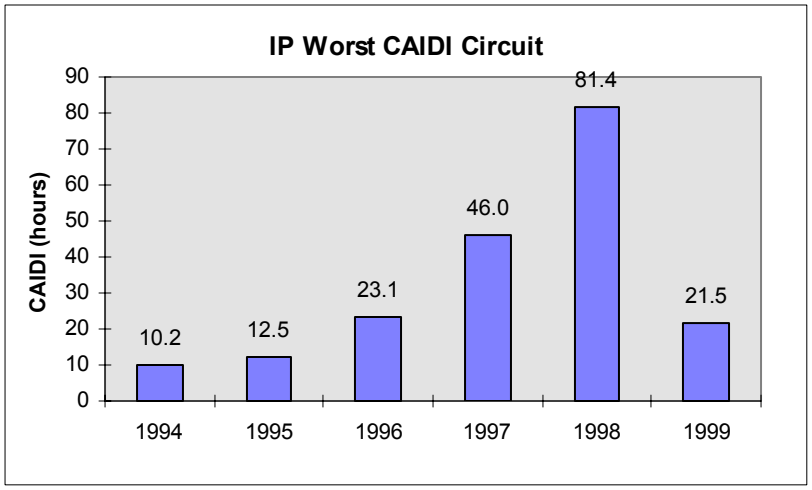


Figure 9 below shows the CAIDI index of IP's single worst performing circuit as reported over each of the last six years. While the trend shows that CAIDI has been getting steadily worse until 1999, the 1999 statistic is a significant improvement. This may have been enabled by a lack of major storms in the IP service territory in 1999.

Figure 9



The Commission finds that, overall, the statistics provided in IP's 1999 reliability report indicate significant improvement in reliability when compared to recent past years. Because of differences in how the reliability indices were determined year to year, differences in how the basic outage data was recorded and reported year to year, and some credibility problems with data in the 1999 report, it is not clear how much of the indicated reliability improvement is real.

6. Illinois Power's Plan to Maintain or Improve Reliability

Illinois Power claims it is committed to finding better and more cost effective ways of performing vegetation management, preventative maintenance, and other reliability projects. Further, IP states that future capital and maintenance budgets are being created with this commitment in mind. From an operational point of view, utilities generally face the same types of challenges to provide reliable delivery service each year. IP states that these challenges can usually be grouped into one of the following five categories:

1. Outages caused by weather
2. Outages caused by the condition of equipment
3. Outages caused by wildlife
4. Outages caused by trees
5. Outages caused by the public

IP's 1999 controllable outages by cause category were presented and discussed already with Tables 4 and 4a in this report.

Illinois Power provided the following planned expenditures for its four year reliability plan:

	(Million 1998 dollars)			
	2000	2001	2002	2003
Maintaining Existing T&D System	25.0	25.4	25.5	25.7
Maintaining/Upgrading/Operating Substations	6.2	6.9	6.9	7.0
Building New Distribution Substations	3.5	4.6	4.6	4.6
Rebuilds Due to Distribution Condition	7.7	8.2	8.2	8.2
Vegetation Management	11.8	12.0	12.1	12.2

Illinois Power states that there are numerous operating and maintenance activities that the company performs on an ongoing basis. Examples of the ongoing operating and maintenance activities it cited include the following:

- IP patrols the distribution circuits once every four years. The purpose of this patrol is to locate and report safety and reliability concerns on the primary distribution system.

- IP's present goal is to perform tree trimming on a four year cycle. However, in response to a data request on August 25, 2000, IP stated that its trim cycle "is currently at a company average of 4.5 to 5.0 years." In some locations the time between tree trimming is as much as six or seven years. The vegetation management budget numbers shown above show no commitment by IP to correct its failure to achieve a four year trimming cycle.

- IP inspects oil circuit reclosers and reads operation counters monthly. IP replaces line reclosers every five years and substation reclosers every five years.

- IP's standards call for the installation of at least four lightning arresters per circuit mile. It is not clear, however, to what degree IP retrofits existing circuits with lightning arresters to meet this policy, especially in areas which experience a significant number of lightning outages.

- IP's standards call for animal guards to be installed on new equipment to help minimize animal related outages. In the planned improvements for worst performing circuits, IP states virtually every time that "Animal guards and lightning protection will be installed on all *new* transformers to reduce further outages." On some of the worst performing circuits, IP also says that animal protection will be installed, if possible, on devices that experience an animal outage to prevent future occurrences. IP does not mention, however, any general proactive measures to install animal guards in wooded areas likely to have a high exposure to animal-caused outages.

- IP has seven portable substations of various sizes and voltage ratings that are available to minimize extended service interruptions due to substation equipment problems.

The Commission believes Illinois Power's plan and budgets do not emphasize vegetation management sufficiently. IP should take measures to achieve and maintain a four year vegetation management cycle.

7. Potential Reliability Problems and Risks

IP admits it is behind in tree trimming. From 1995 through 1998, Illinois Power has reported that its tree trimming goal was a three year trim cycle, but that some circuits were experiencing a four or five year cycle. In 1999, Illinois Power abandoned its three year trim cycle goal. Now Illinois Power reports that its goal is a four year cycle, that its trim cycle is currently at a company average of 4.5 to 5.0 years, and that some circuits have gone six to seven years without a trim. Illinois Power has not provided any analysis to justify changing its tree trimming goal. The Commission feels that Illinois Power needs to increase its efforts to catch up on its tree trimming. The Commission recommends that IP achieve its four year trim cycle policy by the end of year 2002. The Commission also notes that trimming trees that are long overdue increases public outrage.

An unusually large number of customer interruptions seem to be caused by the actions or errors of IP employees and IP contractors. IP needs to investigate the root causes for these problems and implement training and whatever other steps are needed to make substantial improvements in this area.

IP should address the issue of training its personnel to do a much more careful job of identifying safety and reliability problems when performing distribution circuit inspections.

IP should also address the issue of training its personnel to correctly identify outage causes, including differences between weather and tree related outages.

8. Review of Illinois Power's Implementation Plan for the Previous Reporting Period.

Attachment 10 to IP's 1999 Reliability Report is labeled "Status of Actions Indicated in Prior Annual Reports." Completed actions are described for only 10 of the 19 worst performing circuits listed in the 1998 report, and some of those completed actions do not seem to address the predominant causes given for the outages. For 3 circuits IP states that the circuit will be trimmed in 1999, and for 7 circuits IP states that the circuit will be patrolled in 1999, with no indication whether or not this work was actually completed even though IP's report is dated June 1, 2000. Also, for 7 circuits IP indicated that an action plan would be established by July 31, 1999, but did not provide any information about that plan nor indicate whether or not it was actually developed.

Generally, IP did a poor job of describing completed actions from the prior year's plan, which may also mean that few of the planned actions were actually done. IP needs to do a better job of following through on planned actions to improve the performance of worst performing circuits and in describing the completed actions in its annual reliability report, as well as actions still planned for those circuits.

9. Summary of Recommendations

First, Illinois Power should do everything necessary to get up to date with tree trimming. The Commission recommends that IP be back on a four year tree trimming cycle no later than December 31, 2002.

Second, Illinois Power should address and fix the problems which result in more than 25% of the controllable customer interruptions in 1999 being caused by accidents, dig-ins, and "human error" made by IP personnel and IP contractors.

Third, Illinois Power should do a better job of following through on planned actions to improve the performance of worst performing circuits and in describing the completed actions and planned actions in its annual reliability report.

Fourth, Illinois Power should promptly fix the safety and reliability-related problems on Bloomington Circuit 202.

Fifth, Illinois Power should address the issue of training its personnel to do a much more careful job of identifying safety and reliability problems when performing circuit inspections.

Sixth, Illinois Power should address the issue of training its personnel to correctly identify and record outage causes, including differences between weather and tree related outages.